

1 ABSTRACT OF THE DISCLOSURE

2 A process for fabricating ceramic composites employs a  
3 thermoplastic photo-curable pre-ceramic polymer in which the  
4 component is shape by a variety of standard composite  
5 fabrication techniques, such as filament winding, tape  
6 winding, and woven cloth winding. The process includes  
7 steps of passing ceramic fiber monofilament, tow, mat, or  
8 woven cloth through a solution of said thermoplastic  
9 photo-curable pre-ceramic polymer, applying ceramic fiber  
10 monofilament, tow, mat, or woven cloth to a moving flat  
11 substrate, using a compaction roller to press the  
12 thermoplastic pre-ceramic polymer coated ceramic fiber onto  
13 flat substrate using photo-light of the ultraviolet,  
14 visible, or infrared light spectrum to induce cross-linking  
15 (curing) of the photo-curable pre-ceramic polymer thereby  
16 rendering a thermoset polymer and either partially or  
17 completely pyrolyzing the now cured pre-ceramic polymer  
18 matrix coated ceramic fiber material.